

WHAT IS CLAIMED IS:

1. A composite media file broadcasting program  
broadcasting control system comprising:

an organizing unit generating and managing  
organized schedule information map expressing program  
5 frame and time frame of CM in the program frame as  
broadcasting information;

a producing unit obtaining broadcasting schedule  
information map based on said organized schedule  
information map generated by said organizing unit,  
10 assigning composite media file to be actually  
broadcasted to each time frame expressed in said  
broadcasting schedule information map and generating  
composite media file modification schedule information  
map and file updating schedule information map of each  
15 file forming said composite media file;

a schedule control unit receiving said organized  
schedule information map managed by said organizing unit,  
said composite media file modification schedule  
information map and said file updating schedule  
20 information map held in said producing unit and  
performing unitary management thereof; and

a broadcasting unit for broadcasting a  
broadcasting data to a transmission line according to a  
broadcasting schedule information provided from said  
25 schedule control unit.

2. A composite media file broadcasting program  
broadcasting control system as set forth in claim 1,  
wherein

a storage device storing a program information,  
5 a broadcasting schedule information map and a time  
information; and

a trigger input device commanding modification  
of said broadcasting data of the program on broadcasting  
to said broadcasting unit.

10 3. A composite media file broadcasting program  
broadcasting control system as set forth in claim 1,  
wherein said organizing unit includes organized schedule  
information map input means for inputting the program  
5 information and the organized schedule information map  
to said schedule control unit.

4. A composite media file broadcasting program  
broadcasting control system as set forth in claim 1,  
wherein said producing unit includes map input means for  
inputting said composite media file modification  
5 schedule information map and said file updating schedule  
information map for each file forming said composite  
media file to said schedule control unit.

5. A composite media file broadcasting program

broadcasting control system as set forth in claim 1,  
wherein said broadcasting unit comprises:

unitary broadcasting schedule information map  
5 generating means for obtaining said broadcasting  
schedule information map and order information of time  
identifiers used in said broadcasting schedule  
information map obtained from said schedule control unit  
and generating a unitary broadcasting schedule  
10 information map;

broadcasting preparing means for performing  
broadcasting preparatory process on the basis of said  
unitary broadcasting schedule information map generated  
by said unitarily broadcasting schedule information map  
15 generating means; and

composite media file broadcasting means for  
broadcasting a broadcasting data prepared per designated  
broadcasting start timing.

6. A composite media file broadcasting program  
broadcasting control system as set forth in claim 1,  
wherein said schedule control unit comprises:

broadcasting schedule information map  
5 registering means for univocally assigning a program  
identifier to a program, storing attribute information  
input from said organizing unit and program information  
of the map of the program identifier, and generating  
data broadcasting schedule information map and a time

10        object map from said broadcasting schedule information  
map for storing in said storage device;  
broadcasting schedule information map outputting means  
for outputting said data broadcasting schedule  
information map of the program to be object from input  
15        program associated information; and  
time information output means for outputting  
order information on a time axis of the time object and  
time object map.

7.        A composite media file broadcasting program  
broadcasting control system as set forth in claim 1,  
wherein said storage device comprises:

5        program information storage portion for storing  
program information;  
broadcasting schedule information map storage  
portion for hierarchically storing said broadcasting  
schedule information map;  
time information storage portion for storing  
10        time object map and time object.

8.        A composite media file broadcasting program  
broadcasting control system as set forth in claim 2,  
wherein said trigger input device comprises:

5        a plurality of broadcasting data modification  
trigger input devices providing modification command of  
the broadcasting data to said broadcasting unit upon

performing untime broadcasting.

9. A composite media file broadcasting program  
broadcasting control method in a composite media file  
broadcasting program broadcasting control system  
including an organizing unit managing program frame and  
5 time frame of CM in the program frame, producing unit  
generating a composite media file to be broadcasted and  
broadcasting schedule information, broadcasting unit  
performing broadcasting of broadcasting data to a  
transmission line according to information provided from  
10 said organizing unit and said producing unit, and a  
trigger input device designating modification of  
broadcasting data of the program on broadcasting to said  
broadcasting unit, said method comprising the steps of:

setting pointer information to broadcasting  
15 schedule information map storing broadcasting start  
timing without setting real time value as broadcasting  
start timing of a plurality of said broadcasting  
schedule information map in hierarchy;

storing time object and attribute information  
20 thereof expressing one point on a time axis in the  
broadcasting schedule information map storing the  
broadcasting start timing;

enabling broadcasting preparatory process in  
said broadcasting unit even in a condition where  
25 broadcasting start timing is not fixed by expressing

order of time by time expressing function provided for said time object; and

performing broadcasting instantly responding to determination of broadcasting start timing during broadcasting.

10. A composite media file broadcasting program broadcasting control method as set forth in claim 9, wherein a time identifier as identification information of the time object is set in said broadcasting start timing of said broadcasting schedule information and expressing association on a time axis of different broadcasting schedule information maps by using the same time identifier when the same timing is expressed in different broadcasting schedule information map.

11. A composite media file broadcasting program broadcasting control method as set forth in claim 9, wherein, in said time object, context of the time objects on a time axis is expressed by three kinds of times of time fixed type, range designation type and offset designation type and discriminate the time not known the context.

12. A composite media file broadcasting program broadcasting control method as set forth in claim 11, wherein the context of broadcasting start timing of

5 broadcasting schedule information at the same or  
different hierarchical levels on the time axis by the  
time object of range designation type and offset  
designation type.

13. A composite media file broadcasting program  
broadcasting control method as set forth in claim 9,  
which uses kind of unit generated the time object, such  
as organizing unit, producing unit or the like, kind of  
5 time object, such as time fixed type, range designation  
type and offset designation type, kind of trigger input  
device determining a real time value for the time object  
in range designation, and extending character string as  
attribute information of the time object registered in  
10 the time object map,

Classifying broadcasting schedule information  
determining broadcasting schedule information fixing  
broadcasting start timing in said broadcasting unit,  
broadcasting schedule information of not fixed time and  
15 time are determined in association, and obtaining time  
list to be determined by the trigger input device by  
realizing classification function of the time object by  
said attribute information.

14. A composite media file broadcasting program  
broadcasting control method as set forth in claim 9,  
wherein lump modification of time information is

5 realized by expressing only pointer information to the  
time information without presenting real time value in  
the broadcasting schedule information for facilitating  
partial reusing of the composite media file broadcasting  
program.

15. A composite media file broadcasting program  
broadcasting control method as set forth in claim 11,  
wherein the time object of time fixed type expresses a  
time by real time value, said offset designation type  
5 time object expresses time with the time identifier of  
the objective time object and relative time from said  
time object, and said range designation type time object  
expresses the time with range start time value or the  
time identifier of the time object using the range start  
10 time value and range end value or the time identifier of  
the range end time.

16. A composite media file broadcasting program  
broadcasting control method as set forth in claim 9,  
wherein said time object further includes an association  
type expressing context of time objects on the time axis  
5 by expressing the time with the time identifier of the  
objective time object and start relative time and end  
time in addition to three kinds of time objects of time  
fixed type, range designation type and offset  
designation type, and whereby discriminating the time



10 object unknown the context.

17. A composite media file broadcasting program  
broadcasting control method as set forth in claim 16,  
wherein the context of the broadcasting start timings of  
the broadcasting schedule information of the same or  
5 different hierarchical levels on the time axis by said  
range designation type, offset designation type and  
associated type time objects.

18. A composite media file broadcasting program  
broadcasting control method as set forth in claim 16,  
wherein said trigger input device for permitting user to  
determined broadcasting start timing, presents time  
5 range where the time becomes effective on a user  
interface, by expressing the broadcasting start timing  
of the broadcasting schedule information by the range  
designation type and association type time object.

19. A composite media file broadcasting program  
broadcasting control method as set forth in claim 16,  
wherein said schedule control unit is provided with a  
function for making judgment whether the aggregate of  
5 four kinds of time objects of the time fixed type, range  
designation type, offset designation type and  
association type can be sorted in order of time or not,  
and if sorted, utilizing topological sorting theory of

the order of the time object.

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20. A composite media file broadcasting program  
broadcasting control method as set forth in claim 18,  
wherein screen image modification timing to be provided  
trigger from the trigger input device in a time range by  
the time fixed type and range designation type time  
object, said schedule control unit is provided with a  
function for making judgment of order of the time  
objects for enabling broadcasting of data broadcasting  
program performed screen image modification.

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21. A composite media file broadcasting program  
broadcasting control method as set forth in claim 19,  
wherein screen image modification timing to be provided  
trigger from the trigger input device in a time range by  
the time fixed type, range designation type and offset  
designation type time object, said schedule control unit  
is provided with a function for making judgment of order  
of the time objects for enabling broadcasting of data  
broadcasting program performed screen image modification.

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22. A composite media file broadcasting program  
broadcasting control method as set forth in claim 19,  
wherein screen image modification timing to be provided  
trigger from the trigger input device in a time range by  
the time fixed type, range designation type and

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association type time object, said schedule control unit is provided with a function for making judgment of order of the time objects for enabling broadcasting of data broadcasting program performed screen image modification.

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23. A composite media file broadcasting program broadcasting control method as set forth in claim 19, wherein four kinds of time objects of time fixed type, range designation type, offset designation type and association type are used for expressing screen image modification timing provided trigger by said trigger input device in a certain time range, expressing screen image modification timing for modifying screen image after a given period from trigger, and expressing screen image modification timing provided trigger from said trigger input device in a time range before a certain timing, and said schedule control unit is provided function for judgment of order of time object for enabling broadcasting of data broadcasting program with admixed screen image modification modes.

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24. A composite media file broadcasting program broadcasting control method as set forth in claim 9, which is provided function for designating condition utilizing attribute information of the time object registering the time object map, taking out partial aggregate of time object having attribute adapted to the

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condition from the aggregate of the time object of the  
program and making judgment whether the time objects  
forming the partial aggregate can be sorted in order of  
10 time or not and order of time object as can be sorted.

25. A composite media file broadcasting program  
broadcasting control method as set forth in claim 24,  
which uses kind of unit generated the time object, such  
as organizing unit, producing unit or the like, kind of  
5 time object, such as time fixed type, range designation  
type and offset designation type, kind of trigger input  
device determining a real time value for the time object  
in range designation, and extending character string as  
attribute information of the time object registered in  
10 the time object map, classifying broadcasting schedule  
information determining broadcasting schedule  
information fixing broadcasting start timing in said  
broadcasting unit, broadcasting schedule information of  
not fixed time and time are determined in association,  
15 and obtaining time list to be determined by the trigger  
input device by realizing classification function of the  
time object by said attribute information.

26. A composite media file broadcasting program  
broadcasting control method as set forth in claim 25,  
wherein broadcasting data is broadcasted instantly  
responding to the timing of trigger by enabling

5 broadcasting preparatory process even for the portion  
where the judgment of order is possible by dividing the  
program into a plurality of time zones upon organization  
and production even in the program, in which judgment of  
order of time of the time object can be made and the  
10 portion judgment of the order of time of the time object  
is not possible, by using the time classification code  
of the attribute information of the time object  
registered in the time object map.

27. A composite media file broadcasting program  
broadcasting control method as set forth in claim 13,  
wherein as the attribute information of the time object  
to be registered in the time object map, kind of the  
5 time object is provided for enabling handing of time  
objects having different data structure in single time  
object map with maintaining accessibility of particular  
kind of time object.

28. A composite media file broadcasting program  
broadcasting control method as set forth in claim 27,  
wherein the time object expressing one point on the time  
axis in various mode is handled with single time object  
5 map in a lump, an attribute for discriminating kind of  
the time object in the time object map to handle the  
screen image modification timing with the identifier as  
a common item to be provided in respective time object

in the data broadcasting schedule information map, to  
define the time object having new data structure when  
the time expressing not premised in the screen image  
modification timing for adaptation without requiring  
modification of the data broadcasting schedule  
information map.

29. A composite media file broadcasting program  
broadcasting control method as set forth in claim 9,  
wherein said schedule control unit has a function for  
outputting data broadcasting schedule information, in  
which when the order of the time object is determined,  
the schedule control unit takes the time indicated by  
each time object as the broadcasting start timing, for  
facilitating generation of the unitary broadcasting  
schedule information map from the time object map.

30. A composite media file broadcasting program  
broadcasting control method as set forth in claim 9,  
wherein said broadcasting unit includes a function for  
designating a plurality of variations of order of  
aggregates of the time objects as demanding order of the  
aggregates of the time object to the schedule control  
unit, when the order of the aggregates of the time  
objects is judged by said schedule control unit, if some  
candidates of the order are present, and if number of  
the candidates falls within a designated number,

broadcasting preparation process corresponding to all candidates are performed by the broadcasting by providing a function for outputting all candidates, when the time of the time object is fixed by trigger and order of the aggregates of the time objects is fixed, by selecting the broadcasting data corresponding to the fixed order from the prepared broadcasting data for enabling instantly broadcasting the broadcasting data without performing broadcasting preparation process for broadcasting of the broadcasting data instantly responding to the trigger timing.